

REMARKS

This is intended as a full and complete response to the Office Action dated October 25, 2006, having a shortened statutory period for response set to expire on January 25, 2007. Claims 1-16 have been examined. The Examiner rejected claims 1-16 under 35 U.S.C. § 102(e) as being anticipated by Lin (US 6,674,778).

Specification

The Examiner objected to the specification because a brief abstract of the technical disclosure in the specification must commence on a separate sheet. In response, Applicant has amended the specification accordingly. Therefore, Applicant respectfully requests the objection to the specification be removed.

Claim Objections

The Examiner objected to claims 5 and 9 due to informalities. In response, Applicant has amended claim 9 accordingly. Additionally, claim 5 has been cancelled. Therefore, Applicant respectfully requests the objection to the claims be removed and allowance of the same.

Claim Rejections Under 35 U.S.C. § 102(e)

The Examiner rejected claim 1 as being anticipated by Lin. In response, Applicant has amended claim 1.

As amended, claim 1 includes the limitation of a first photonic crystal comprising a plurality of columns forming a periodic grating of diffracting elements with a lattice in the horizontal plane such that said lattice of grating has a shape of an equilateral triangle. Lin does not disclose this limitation. In contrast, Lin merely discloses a periodic dielectric structure of the PBG mirrors 132, 134 comprising an array of vertical dielectric-contrasting posts 136 (see Lin, col. 4, lines 45-50 and claim 1). The Examiner appears to rely on col. 4, lines 36-49 of Lin to indicate that the array of posts could have any geometric shape. However, a closer reading of col. 4, lines 36-49 of Lin indicates only that the strength of the PBG mirrors 132, 134 can be tailored by varying the geometry and index contrast of the periodic dielectric structures. This passage in Lin does not indicate that the array of posts is a lattice that has a shape of an

equilateral triangle, as recited in claim 1. In fact, Figure 7 of Lin clearly illustrates that the array of posts is a lattice that is shaped as a square. Moreover, a lattice structure shaped as an equilateral triangle has different characteristics, such as a photonic band gap, as compared to a lattice structure shaped as a square. Further, as set forth in the application, the distance of the lattice structure from the active layer also affects the coupling force. In sum, Lin does not disclose that the array of posts has a lattice structure in a shape of an equilateral triangle.

As the foregoing illustrates, Lin fails to teach or suggest all the limitations of claim 1. This failure precludes Lin from anticipating claim 1. Therefore, Applicant respectfully requests the 102(e) rejection of claim 1 be removed and allowance of the same. Additionally, since claims 2-4 and 7-16 depend from claim 1, these claims are allowable for at least the same reasons as claim 1.

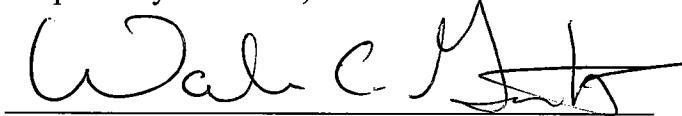
New Claims

New claims 17-20 were added to claim additional aspects of the present invention. Applicant submits that no new matter has been added in new claims 17-20. New claim 17 includes the limitation of a first photonic crystal that includes a plurality of columns positioned along at least one of the lateral sides of the active region such that an end of said plurality of columns is spaced from the lateral side at a first distance and another end of said plurality of columns is spaced from the lateral side at a second larger distance. Lin does not disclose this limitation. Rather, Lin discloses PBG mirrors 132, 134 comprising an array of vertical dielectric-contrasting posts or air holes that are equally spaced from an active region 120 (see Lin, Figure 7). New claims 18-20 include the limitations of at least one first distributed reflector positioned along at least one of the lateral sides of the active region and essentially parallel thereto and at least one second distributed positioned along at least one of the longitudinal ends of the active region and essentially parallel thereto. Lin does not disclose these limitations. Rather, Lin merely discloses PBG mirrors 132, 134 disposed on the lateral sides of the active region (see Lin, Figures 1 and 7). Therefore, Applicant believes that new claims 17-20 are in condition for allowance and respectfully requests the same.

Conclusion

Having addressed all issues set out in the office action, Applicant respectfully submits that the case is in condition for allowance. If the Examiner has any questions, please contact the Applicant's undersigned representative at the number provided below.

Respectfully submitted,



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